Ecological Risk Assessment - Ashland - TOSC

Contaminants Of Concern (COC) At the Ashland Harbor Site

The COC originate from Coal Tars which were residuals from the manufactured gas plant (MGP) process that used coal as a feedstock.

Coal Tars are a complex mixture of thousands of organic compounds of

varying molecular weight, chemical makeup, and toxicities to aquatic
organisms.
The COC are generally 1) "regulatory" chemicals, i.e demonstrates toxic
effects to humans and aquatic life, 2) have approved analytical methods,
and 3) have been found at a number of investigated MGP sites based on
the nature and characteristics of process residuals. The primary
chemical groups of coal tar COC and examples of compounds in those
groups are:
Polycyclic Aromatic
Hydrocarbons (PAHs)Volatile Organic
Coumpounds(VOCs)Phenolic Compounds
AnthraceneBenzenePhenol
Benzo(a)pyreneEthylbenzene2-Methylphenol
Benzo(k)flouranthene Toluene4-Methylphenol
ChryseneXylene2,4-Dimethylphenol
Napthalene
Phenanthrene

In addition, coal tars may contain heterocyclic aromatic organic
compounds containing nitrogen (quinolines, carbozoles), sulfur
(thiopenes), or oxygen (dibenzofurans) as well as cresols and many
alkyl-substituted PAH compounds. Studies suggest that the environmental
impacts of heterocyclic compounds, even if present in relatively low
concentrations, may exceed that of PAHs. Their fate and effects need to
be considered in environmental studies.
Sediments with coal tar oils associated with them will act as toxic
reservoirs that will persist for years with long term organic
contaminant releases over time scales measured in generations.
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